

Claims

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1. A method of inhibiting blood supply to a tumor, comprising the steps
of:

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(a) locating an artery which carries major blood supply to the
tumor, said artery being one that is proximate to the tumor ;
and

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(a) intra-arterially injecting into the located artery a predetermined
quantity of a polyunsaturated fatty acid in the form of a solution
of at least one polyunsaturated fatty acid chosen from linoleic
acid, gamma-linolenic acid, dihomo-gamma-linolenic acid,
arachidonic acid, alpha-linolenic acid, eicosapentaenoic acid,
docosahexaenoic acid and cis-parinaric acid and one or more
anti-angiogenic substance(s).

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2. A method as in claim 1 including the step of causing antiangiogenic
action, wherein polyunsaturated fatty acid is in the form of a lithium
salt solution and wherein said predetermined quantity of the fatty
acid is generally in a range of 0.5 mg to 50 gm.

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3. A method as in claim 1 wherein step (b) comprises intra-arterially
injecting a predetermined quantity of a polyunsaturated fatty acid in
the form of a derivative of a polyunsaturated fatty acid including at
least one predetermined anti-angiogenic substance to the extent of
1 to 1000 mg/kg/ body weight, said derivative of polyunsaturated
fatty acid being chosen from glycerides, esters, free acids, amides,
phospholipids and salts.
4. A method as in claim 1 wherein the polyunsaturated fatty acid is in
the form of a lithium salt solution of gamma-linolenic acid and
eicosapentaenoic acid/docosaehaenoic acid, including a predeter-
mined quantity of anti-angiogenic substance chosen from Angiostatin,
Endostatin[®], platelet factor-4, TNP-470, thalidomide, interleukin-12,
and metalloprotease inhibitors, and a predetermined anti-cancer drug.
5. A method of treating a tumor and facilitating visualization of
remission of the tumor responsive to treatment, comprising
(a) locating an artery which carries a major portion of blood supply to

said tumor and is adjacent to the tumor;

(b) obtaining an initial radiographic image of the tumor region;

(c) injecting into the located artery a mixture of at least

(i) an oily lymphographic agent as a carrier containing one or more
of anti-angiogenic substance(s)

(ii) a lithium salt solution of at least one polyunsaturated fatty acid
chosen from linoleic acid, gamma-linolenic acid, dihomo-gamma-
linolenic acid, arachidonic acid, alpha-linolenic acid,
eicosapentaenoic acid, docosahexaenoic acid and cis-parinaric
acid

(d) obtaining second and subsequent radiographic images of the tumor
region after predetermined lapses of time; and

(e) comparing the initial radiographic image with the second and
subsequent images to assess an extent of remission of the tumor.

6. A method as in claim 5 wherein step (c) comprises intra-arterially
injecting a mixture containing an anti-angiogenic substance chosen

5 from Angiostatin[®], Endostatin[®], platelet factor-4, TNP-470,
 thalidomide, interleukin-12 causing anti-angiogenic action by
 inhibiting the blood supply to the tumor, wherein further the oily
 10 lymphographic agent acts as a carrier for anti-angiogenic sub-
 stance(s), and also for the lithium salt solution of predetermined
 quantities of gamma-linolenic acid, eicosapentaenoic acid and/or
 15 docosahexaenoic acid.

7. A method of treating a cancerous tumor, comprising

(a) using an oily lymphographic agent as a carrier for

- 20 (i) at least one polyunsaturated fatty acid chosen from a lithium salt of
 at least one of linoleic acid, gamma-linolenic acid, dihomogamma-
 linolenic acid, arachidonic acid, alpha-linolenic acid,
 25 eicosapentaenoic acid, docosahexaenoic acid, and cis-parinaric
 acid
 (ii) one predetermined anti-cancer drug, and anti-angiogenic
 substance(s) which are mixed with polyunsaturated fatty acids or
 co-valently linked to fatty acids

(b) administering a predetermined quantity of selected fatty acids and
predetermined anti-angiogenic substance in the oily lymphographic agent
as a carrier.